

**To:** Garrahan, Kevin[Garrahan.Kevin@epa.gov]  
**From:** Smith, Terry  
**Sent:** Wed 8/12/2015 1:14:51 PM  
**Subject:** Re: PALs

No rush. No data yet

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**From:** Garrahan, Kevin  
**Sent:** Wednesday, August 12, 2015 9:10 AM  
**To:** Smith, Terry  
**Subject:** FW: PALs

FYI. I'm be down to EOC in 5 minutes.

Kevin

**From:** Choudhury, Harlal  
**Sent:** Wednesday, August 12, 2015 9:01 AM  
**To:** Garrahan, Kevin  
**Cc:** Sayles, Gregory; Taft, Sarah; Koglin, Eric  
**Subject:** RE: PALs

As listed in the PAL table:

Arsenic:

Oral (mg/L)

	24Hr	30 day	90 day	2yr.
PAL 1	3.5	1.0	0.84	0.14

PAL2	4.7	1.9	1.3	0.42
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PAL3	140	4.2	NR	0.8
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Inhalation:

PAL1: - NR-----

PAL2	0.11	0.021	NR	NR
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PAL3	0.32	0.063	NR	NR
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We do not have values for other metals like lead, cadmium, zinc.

LEAD; EPA recommends IEUBK model for Lead

Zinc: Available in IRIS

Hope this will help.

Thanks Kevin

Harlal

**From:** Garrahan, Kevin  
**Sent:** Tuesday, August 11, 2015 5:11 PM  
**To:** Choudhury, Harlal  
**Cc:** Sayles, Gregory; Taft, Sarah; Koglin, Eric  
**Subject:** PALs

Harlal,

I'm working in EPA's Emergency Operations Center (EOC) providing technical support on the Gold King Mine/Animas River toxic sludge spill in Colorado. Quick question for you -- Do we have any PALs for the following chemicals of concern:

1. Lead
2. Arsenic
3. Aluminum
4. Cadmium
5. Lead
6. Thallium
7. Zinc

I would be surprised if we had PALs for any of these, but would appreciate you double checking. Thanks!

Kevin